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Air Products South Africa (Pty) Ltd Reg. No. 1969/003571/07 4 Spencer Road, Spartan Ex. 1, Kempton Park Private Bag X02, Kempton Park, 1620 T+2711 570 5000 F+2711 570 5281 www.airproducts.co.za

PRESS RELEASE

Air Products South Africa - 'fuelling' the future

- Powering rural education through the use of ground-breaking fuel cell technology -

19 June 2015 - As leaders in the field of hydrogen technology, Air Products South Africa is one of the key partners in a pilot project which aims to enhance the quality of learning and teaching in remote, rural schools. The pilot project forms part of the TECH4RED (Technology for Rural Education and Development) project, initiated by the Department of Science and Technology (DST) in 2012, and has resulted in a powerful public-private partnership (PPP) which is using science, technology and innovation to bring about an effective and efficient rural education environment.

Central to the TECH4RED project is the use of hydrogen fuel cell technology to provide backup power for electronic equipment - notably tablets - which have been introduced to schools in the Cofimvaba district of the Eastern Cape for both teachers and learners. Anglo American Platinum sponsored three platinumbased fuel cell systems, including installation and ongoing maintenance and operations. Air Products is supplying the hydrogen fuel requirements, while Clean Energy Investments (a South African company co-owned by the DST and Anglo American Platinum) commissioned the fuel cells to bring backup power to the schools.

"We are very honoured to be a part of this ground-breaking project. It exemplifies our capabilities in hydrogen-based technologies; and points to a more energy-efficient future that is in line with the global drive to reduce carbon emissions," says Mike Hellyar, Managing Director of Air Products South Africa.

"This initiative also speaks to our corporate social investment (CSI) vision which remains focused on the youth, and finding ways of opening the door to better quality education."

The hydrogen fuel cell pilot project, officially launched on 12 June at Mvuzo Junior Secondary School in Cofimvaba, Eastern Cape, is an important milestone along the road to introducing commercially viable fuel cell technology in South Africa. Globally, Air Products has made vast strides in hydrogen-based technology as an alternative fuel source. In the United States (US), for example, the company now has multiple hydrogen re-fuelling stations in California.

The project represents the harnessing of Air Products' world-leading hydrogen technology for local requirements, and to this end, Air Products South Africa has been working closely with Clean Energy Investments, a South African company co-owned by the DST and Anglo American Platinum, in order to assess the local market and its needs.

"The Cofimvaba fuel cell pilot project is pivotal to our understanding of South Africa's capacity to utilise hydrogen fuel cell technology in order to address a number of socio-economic challenges. Our task is to grow the fuel cell market in South Africa, to develop the necessary infrastructure and create partnerships, such as with Air Products, to develop the technology according to local requirements," explains Gavin Coetzer, Business Development Executive of Clean Energy Investments, implementers of the TECH4RED project.

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For Air Products, hydrogen technology has increasing relevance in the South African context. "Fuel cells provide a compelling answer to numerous socio-economic challenges we have in this country, particularly when it comes to backup power supply," says Sizwe Nkonde, General Manager of Packaged Gases at Air Products South Africa.

"Hydrogen fuel cells provide a stable power environment which is not at risk of theft and they are also much quieter than generators, making them non-disruptive and conducive to a learning environment. And above all, fuel cells are 'green' technology - the only by-products in their operation are water and heat. This adds to their relevance not only in rural school environment, but in a wider industrial world which is increasingly focused on reducing or eliminating carbon emissions."

He notes that hydrogen technology has particular application for stand-by power in the telecommunications industry, as well as mission-critical sectors such as hospitals and clinics. Hydrogen fuel cells have no working parts, require little or no maintenance - and have a longer life-cycle than other forms of backup power.

"Fuel cell technology is best-of-breed, and its implementation involves several aspects for consideration, and the input of various stakeholders. There is still much work to be done, for example, in terms of legislation in this country. The use of fuel cells is gaining increasing relevance globally, and pilot projects such as TECH4RED are vital for our understanding of the practical applicability of the technology, in this instance improving access to education in rural areas," says Nkonde.

The TECH4RED pilot project is being implemented in 26 schools in the Cofimvaba region, between East London and Oueenstown, where 270 teachers are now using tablets for teaching and learning, and 3,262 tablets have been distributed to learners. Secure storage and charging areas have been set up in all the identified schools. Using technology, the project also includes other focus areas, including health, water and sanitation, energy, nutrition and agri-education. The hydrogen fuel cell project is being implemented at three schools: Arthur Mfebe Senior Secondary, St Marks and Mvuzo Junior Secondary schools.

"The issue of renewable energy and reliable stand-by power is of critical importance, particularly in a rural context. When it comes to education, it is vital to establish a system which provides complete reliability for uninterrupted use of electronic equipment. Success hinges on the learners having access to the server at all times," says Nkonde.

Fuel cell technology is dependent on an efficient, economically viable system of hydrogen supply and distribution. A leader in supply chain systems, Air Products South Africa is committed to working alongside other stakeholders to develop a hydrogen distribution solution that is both scalable and economical for the end-user, according to Hellyar.

"The Cofimvaba project has demonstrated how necessary PPPs are in bringing together various areas of capability, expertise and funding that are necessary in seeing a project to fruition.

Using fuel cells for stand-by power in remote, disadvantaged and unindustrialised areas is a novel, innovative application and Air Products South Africa is extremely pleased to be joining forces with the DST, Anglo American Platinum and Clean Energy Investments in facilitating improved access to educational material, while promoting a greener environment," he concludes.

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Note To Editors

About Air Products South Africa

Air Products South Africa (Pty) Limited manufactures, supplies and distributes a diverse portfolio of atmospheric gases, specialty gases, performance materials, equipment and services to the Southern African region.

Air Products touches the lives of consumers in positive ways every day, and serves customers across a wide range of industries from food and beverage, mining and petrochemicals, primary metal and steel manufacturers, chemical applications, welding and cutting applications to laboratory applications.

Founded in 1969, Air Products South Africa has built a reputation for its innovative culture, operational excellence and commitment to safety, quality and the environment. In addition the company aims to continue its growth and market leadership position in the Southern African region.

Editorial Contacts

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Kendal Hunt Managing Director Kendal Hunt Communications PR and Media Liaison Agency 011 462 6188 082 823 6533 kendal@kendalhunt.co.za
